CLAIMS:

1. An inductive transmission system for inductive transmission of power and full duplex data signals between a first device (1) and a second device (2), comprising

a bi-directional inductive channel (6) between the first device (1) and the second device (2),

first transmission means (121) for transmitting a power signal at a first frequency from the first device (1) to the second device (2) over the inductive channel (6),

a first modulating device (21) for modulating a first data signal at a first modulation frequency,

a second modulating device (15) for modulating a second data signal at a second modulation frequency,

second transmission means (124) for transmitting the modulated first data signals from the first device (1) to the second device (2) over the inductive channel (6), and for transmitting the modulated second data signals from the second device (2) to the first device (1) over the inductive channel (6),

wherein the first modulation frequency and the second modulation frequency are at least a factor two apart, wherein the transmission system furthermore comprises detection means for demodulating the first data signal and the second data signal on the first device (1) side respectively on the second device (2) side, and signal cancellation means for cancellation of the first data signal respectively second data signal from the transmitted second data signal respectively transmitted first data signal at the first device (1) side respectively second device (2) side.

2. An inductive transmission system according to claim 1, wherein the first modulating device (21) and the second modulating device (15) are suitable for performing amplitude modulation.

3. An inductive transmission system according to claim 1, wherein the detection means are synchronous detection means.

4. A transmission system according to claim 1, wherein the first frequency is a factor 10 or more apart from the first and second modulation frequency.

5. A transmission system according to claim 1, wherein the first transmission means (121) comprises a first coil (122) at the first device (1) side and a first coil (123) at the second device (2) side.

6. A transmission system according to claim 1, wherein the second transmission means (124) comprises a second coil (125) at the first device (1) side and a second coil (126) at the second device (2) side.

7. A method for inductive transmission of power and full duplex data signals between a first device (1) and a second device (2), comprising

transmitting power signals from the first device (1) to the second device (2) at a first frequency over an inductive channel (6),

transmitting first data signals modulated at a second frequency from the first device (1) to the second device (2) over the inductive channel (6), and

transmitting second data signals modulated at a third frequency from the second device (2) to the first device (1) over the inductive channel (6), the second and third frequency being at least a factor two apart,

demodulating the first data signal and the second data signal on the first device (1) side respectively second device (2) side, and

cancellation of the first data signal respectively second data signal from the transmitted second data signal respectively transmitted first data signal at the first device (1) side respectively second device (2) side.

8. A method according to claim 7, comprising amplitude modulating the first data signals and the second data signals before transmission.

9. A method according to claim 7, wherein demodulating the first data signal and the second data signal comprises performing synchronous detection.